R E P O R T R E S U M E S

ED 014 276 JC 660 382

INSTITUTIONAL RESEARCH IN THE JUNIOR COLLEGE--PROCESS AND PRODUCT, PROCEEDINGS OF THE ANNUAL CONFERENCE FOR DIRECTORS OF INSTITUTIONAL RESEARCH IN CALIFORNIA JUNIOR COLLEGES (1ST, PACIFIC GROVE, CALIFORNIA, MARCH 11-13, 1965).

BY- MENEFEE, AUDREY

CALIFORNIA JUNIOR COLL. ASSN., MODESTO
CALIFORNIA STATE DEPT. OF EDUCATION, SACRAMENTO
EDRS PRICE MF-$0.25 HC-$2.04 49P.

DESCRIPTORS- *JUNIOR COLLEGES, *INSTITUTIONAL RESEARCH, RESEARCH NEEDS, RESEARCH UTILIZATION, FINANCIAL SUPPORT, ORGANIZATION OBJECTIVES, *CONFERENCE REPORTS, RESEARCH OPPORTUNITIES,

PARTICIPANTS IN A CONFERENCE OF CALIFORNIA JUNIOR COLLEGE PRESIDENTS AND RESEARCH DIRECTORS CONSIDERED (1) THE PURPOSES AND= USES OF INSTITUTIONAL RESEARCH, (2) THE SCOPE OF INSTITUTIONAL RESEARCH, WITH PAPERS GIVING THE POINTS OF VIEW OF A COLLEGE PRESIDENT, THE COORDINATING COUNCIL FOR HIGHER EDUCATION, AND THE STATE DEPARTMENT OF EDUCATION, (3) FUNDING OF RESEARCH ACTIVITIES, (4) ORGANIZATION FOR RESEARCH, (5) RESOURCES TO ASSIST IN JUNIOR COLLEGE RESEARCH PROGRAMS, AND (6) REPORTS OF RESEARCH ON YEAR-ROUND CALENDARS, STATEWIDE COST AND STATISTICAL ANALYSES, FOLLOW-UP OF GRADUATES, AND CRITERIA FOR SELECTION OF VOCATIONAL STUDENTS. SUMMARIES OF PAPERS ARE PRESENTED IN THIS REPORT. (WO)

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INSTITUTIONAL RESEARCH in the JUNIOR COLLEGE... PROCESS and PRODUCT

UNIVERSITY OF CALIF.
LOS ANGELES

DEC 09 1966

CLEARINGHOUSE FOR
JUNIOR COLLEGE
INFORMATION

Reports presented to a Conference held
at Asilomar, Pacific Grove, California
March 11-13, 1965

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University of California
Los Angeles, Calif. 90024

CJCA Committee on Institutional Research

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INSTITUTIONAL RESEARCH IN THE JUNIOR COLLEGE:

PROCESS AND PRODUCT

PROCEEDINGS OF THE FIRST ANNUAL CONFERENCE FOR

DIRECTORS OF INSTITUTIONAL RESEARCH

IN CALIFORNIA JUNIOR COLLEGES

Asilomar Conference Grounds, Pacific Grove, California

March 11-13, 1965

Under Sponsorship of the California Junior College Association,

the CJCA Committee on Institutional Research, and

The Division of Higher Education, California State Department of Education

Edited by
Audrey Menefee

FOREWORD

"Let no concept be utilized and no procedure adopted which has not been examined candidly and a bit skeptically. Innovation in and of itself possesses no great merit, but innovation which results from an inquiring mind, well-conceived hypotheses, and honest evaluation gives assurance of a sensitive and lively environment for learning."

-Edward J. Gleazer, Jr.
Executive Director
American Association of Junior Colleges

All of us are striving for excellence in our junior colleges for we know the impact an excellent college can have on future generations. A well-conceived program of self-study will help achieve this goal and the concomitant dividends of increased effectiveness, improved esteem both inside and outside the institution, and savings in cost.

Recognizing the necessity for sound institutional research programs in the member junior colleges, the California Junior College Association Board of Directors last spring authorized a Committee on Institutional Research to provide leadership for this important function at the state level. The Committee decided that its most significant accomplishment in its initial year would be to bring those persons engaged in institutional research together for a conference to seek, as well as give, direction to junior college institutional research. And thus the first Asilomar Conference on Institutional Research was conceived.

Many people were responsible for the excellent over-all quality of the program. Without exception, the participants were well organized and made fine presentations. It is impossible to give individual credit to each person on the program, but a special note of thanks--and praise--is due the Committee members who planned the sessions and made all arrangements. Seldom has a first effort been more rewarding.

Response to the conference was most gratifying. Even though restricted to one person from each member college, the turnout was large with almost all of the colleges represented along with visitors from several universities. At the suggestion of those attending, a second Asilomar Conference is planned for next year. It will be held March 10-12, 1966.

As we look ahead it seems certain that institutional research will expand quantitatively and hopefully, qualitatively. The Committee hopes that this first conference has assisted in providing direction to this expansion.

A. Robert DeHart, Foothill College
Conference Director and Chairman,
CJCA Institutional Research Committee

Committee Members: George Ebey, College of San Mateo
Audrey Menefee, American River Junior College
Ben Gold, Los Angeles City College
Herbert L. Swanson, El Camino College
Leslie Wilbur, Barstow College

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First Session: Keynote Address

Presiding: A. Robert DeHart

INSTITUTIONAL RESEARCH IN THE JUNIOR COLLEGE: PROCESS AND PRODUCT

LEWIS B. MAYHEW, Professor of Education, Stanford University
Director, Junior College Leadership Training Program
Director, Community College Planning Center,
Stanford University
Research Consultant, Stephens College

Summary of Dr. Mayhew's Comments:

A college is supposed to be a citadel of rationality, in which facts are important. Yet typically, with respect to itself, a college is almost the antithesis of rationality.

I wonder how many research specialists in this room can answer these questions?

1. Why really do students withdraw from college before completion of a program?

2. What effect do remedial courses have on longevity of students or their subsequent completion of courses in junior college? Do such courses have any effect on these, or on graduation, or on transfer?

3. What are the correlates of the number of courses offered by specific departments? Does the college with more courses in history do better than the one with fewer? Do its students do any better upon transfer? Do they get better jobs? The only relationship found so far seems to be with size of student body.

4. How much time do students typically spend in study? Do they spend different amounts for each course? Where do they study? How?

5. From what sectors of the population do people come who attend your institution's lectures, concerts, and the like?

6. What is the cost of each course offered in your institution? Are the costliest courses "earning their keep"?

7. Where do students actually go to get help with personal problems and to get academic counseling? To the counselors? To the faculty? Parents? Friends?

8. What is the relationship between student estimates of teachers and various characteristics of faculty? Do those teachers considered most effective have some particular academic qualifications? Do students react differently to, or set different standards for, male and female teachers?

9. What is the relationship of patterns of courses taken and subsequent success of transfer students? Is there any significant difference between those who follow an all-academic program and those who take some technical or vocational work? Do foreign language majors differ from others upon transfer?

10. What effect does assignment of probationary status have on freshman students? Does it increase longevity? Decrease it? What proportion of such students actually graduate?

11. In what direction do student interests change during their time in junior college? Is there a relationship between interest change and pattern of courses followed? Specific courses?

12. How do graduates of junior colleges compare with graduates of four-year institutions and with similarly-aged students having no higher education, with respect to knowledge, attitudes, character traits?

13. What technical-vocational courses does a college really need?

14. How does the college environment press on students, faculty, and townspeople?

15. What in reality is the ability level of adult evening students? Are they brighter than day students? Not so bright? Any other differences?

16. What good do sequences of courses and prerequisites do? Would a student in Political Science 2 do as well whether or not he had completed Political Science 1?

Institutions answer such questions in a variety of ways.

1. Most frequently they are answered by hunch or insight by someone who bases his belief on casual or fugitive information. This is valuable, especially if the individual knows his institution so well that most of his decisions are sound.

2. Sometimes they are answered by a committee pooling casual information. Persons having differing skills and knowledge bring together their ideas and often produce reasonably valid solutions to institutional problems.

3. Or a faculty committee pools casual information and asks for an ad hoc collection of data, from such specialists as registrars or recorders.

4. Or a single official pulls together data from several offices to answer a specific question. He is apt to be a dean of admissions, with access to data of other offices.

5. Or someone is appointed to collect data regularly that is generated elsewhere, and record it. He represents the beginnings of a director of institutional research.

6. Or an office is created to record data, to collect some of its own, and to interpret it. Often this is done to supply material for such public relations activities as presidential speeches.

7. Or a research office is created to conduct a continuing internal audit of the institution. It conducts inquiries for the administration and for various faculty groups. It may seek to generate interest in the problems that its staff identifies, but it is still regarded as a service agency for the institution.

8. Or an office is established which does each of these things, and also branches out to work on broader aspects of education. It may provide services on a contract basis to outside agencies. It may actively solicit grants and foundation subventions for the matters that concern its staff. This kind of office is apt to be found especially in certain prestige institutions.

A look at examples of both successes and failures in institutional research

First, some successes (research is successful if it has some effect on institutional policy):

W. W. Charters' diary study at Stephens College in the 1920's became the basis for the Stephens College curriculum.

A longitudinal study of students at Michigan State relative to remedial services yielded the finding that such courses were a crutch, permitting students to stay in college one or two terms longer, but having no observable effect on increasing their chances for graduating or completing a program.

A survey of high school seniors was made in an attempt to project first semester enrollment and course demand for a new college, in an area of Florida which had never had a college. It yielded a near-perfect estimate of first-year student population.

A survey of faculty mobility at Minnesota provided the basis for more effective staffing. It led to strong recommendations concerning better communications channels between faculty and administration, and improvement in fringe benefits.

A study of the relationship of SAT scores to upper division work at Yale showed that the College Boards were a good predictor of upper division work, and even of graduate level performance.

Studies of space utilization have been valuable in many institutions.

Second, some failures (research is a failure when its findings are not applied to institutional policy):

Follow-up studies of alumni in certain colleges show that students have little respect for comprehensive examinations - but these continue to be required of seniors.

Studies of the success of early entrance and advanced placement for high school students show that the 12th grade is normally a waste of time, and that many high school students can handle college work very well after 10th or 11th grades, with no emotional problems. But we continue to require four years of high school.

Studies on relative cost of courses and departments can fill volumes, as can studies on the relationship between number of courses and faculty salary budget. Despite the findings, expensive courses proliferate in most colleges.

Studies on the use of new media have shown fairly conclusively that TV instruction is as effective as face-to-face, but when the original funding for the studies was withdrawn, instruction went back to the old traditional lecture halls.

We will get further studying failures than successes. Let's consider some reasons for institutional research failures.

There is a serious shortage of skilled people doing research. Institutional research has not yet attracted enough sophisticated technical people. Research that is open to question by knowledgeable social scientists will likely be unacceptable to a critical-minded faculty.

Researchers too often view their no-significant-difference findings as being unimportant or unworthy of dissemination. Or, such findings are used equally by exponents of change and by exponents of no change.

There is a lack of cumulative data to assign meaning to findings. Too often, research projects are one-shot affairs, or there is not enough background data on which to build a project.

Reports are too large and too complex. Faculty people and administrators simply don't have the time to read through thick compilations of data. I would recommend that all research reports be presented in four pages of readable prose.

Faculties are unwilling to accept evidence if it counters prevailing belief. The research on effectiveness of television teaching is impressive, yet faculty reluctance persists. The inverse relation between course offerings and salary levels is well documented, yet faculties insist on more rather than fewer courses.

Researchers fail to tackle the genuinely important problems. Studies made for accreditation applications are formalized and almost routine. Often they hardly touch the areas of real institutional concern.

Research efforts sometimes fail because the research worker has alienated the faculty which must convert his findings into practice.

Should a junior college enter institutional research?

I don't know. The real answer is that if it does decide to, however, several conditions are necessary:

1. There must be sufficient funding. Is the institution prepared to fund a research project? Research involving human beings is among the most expensive which can be attempted. Offhand, I would say that 3 to 5% of the institutional budget might be a good amount to plan a workable on-going program of institutional research.

2. There must be availability of trained personnel. Are competent research workers available? Is the administration willing to give strong support to a coordinator of research by placing him high enough in the structure so that he can truly look at all parts of the institution?

3. There must be administrative and faculty willingness to use data and act on it. Are the faculty and administration ready to examine critical issues and accept fact even if it is counter to prevailing belief? It really will do little good to produce research data if the faculty is convinced that its own experience is sufficient to resolve problems and answer questions.

If the answers to these questions suggest a reasonably healthy climate for institutional research, a workable structure and agenda can be described. It may be sufficient to have a director of research and a single secretary with some statistical experience. The director should ideally possess the technical skills needed to do the work, and also be able to attract respect of the faculty.

Another workable plan, especially for a small college, is to create a position of a part-time research consultant--who may be located at a major university --and a less experienced person working on campus as a full-time research associate. This is the plan which is followed by Stephens College.

As to the agenda, the field is wide. Space studies, cost studies, alumni studies, analyses of test data, predictive studies, and comparison of student performances on standardized tests are some which can bear immediate fruit. And if they are successfully carried out, reported, and implemented, they can gain faculty confidence for more ambitious undertakings.

* * *

DISCUSSION

In response to a participant who asked how he could direct research at Stephens College while serving at the same time as a professor at Stanford, Dr. Mayhew called attention to the fact that his title has been changed from Director of Research to Research Consultant. "Coming in every other month, one cannot give the consistent attention to ongoing research that is needed. At Stephens, of course, the faculty has for many years been conducting continuing research in many areas, pretty much on its own. On my bi-monthly visits I try to stimulate, to pull findings together, and to catch up with what's going on, concentrating on one major research subject at a time. A variant of the 'outside consultant' approach is being tried by 13 women's colleges on the East Coast, which have banded together to employ a top-flight person to direct studies on problems that are common to all 13."

Second Session: YOUR INSTITUTIONAL RESEARCH PROGRAM: How Little -- How Much?

Presiding: Leslie Wilbur

The Accreditation Commission Answers...

EDWARD SIMONSEN, President, Bakersfield College
President-Elect, California Junior College Association
Past Chairman, Accrediting Commission for Junior Colleges

Summary of Dr. Simonsen's Comments:

In addressing myself to the question "Institutional research, how little or how much?" I am not speaking officially for the Accreditation Commission. I will, however, draw upon my experience in preparing accreditation reports, serving on accreditation teams, and most recently as a member of the Accrediting Commission. What I would like to suggest today is that the Accrediting Commission does have a position on institutional research, and that the answer to our question is a qualitative one. I'd like to follow that with a few personal observations about the conduct of institutional research programs.

Purpose of Accreditation

First, may I call to mind a basic policy of the Junior College Commission. In one of its earliest statements, the Commission rather forcefully declared that junior colleges should be accredited on the basis of their achieving the objectives which they had set for themselves. This policy was provided as a safeguard against having inappropriate standards set for junior colleges as they attempted to meet local needs.

It is, then, the position of the Accrediting Commission to support self-study, not slavish adherence to a set of rigid standards. At this point, may I suggest to you some findings from a study in progress by John Collins, the Dean of Students at Bakersfield College. In a preliminary report, he makes the following observations:

> Staff members at newly-established junior colleges reported that completion of a rigorous self-study during the establishment period was very difficult. They suggested that the demands of getting a college off the ground were more immediate than a comprehensive self-appraisal.
>
> On the other hand, some of the established junior colleges suggested that they did not do a comprehensive self-study exclusively for accreditation purposes. Rather, they believed that self-evaluation was a continuous process. As one respondent put it, "Our department meetings become a 'dialogue in assessment.'"

This gets to one of Dr. Mayhew's main points in which he urged continuous rather than one-shot research studies.

The Commission has concentrated on the self-study concept, and many junior colleges have accepted it aside from the pressure of preparation for accreditation. The accreditation form is streamlined now, and reflects our main interest in studies made over the last five years rather than in a crash self-study project

done for the accreditation team.

With this background, then, let me suggest that the question "How little or how much?" cannot be answered with a quantitative reply. Instead, I believe the Commission would rather look upon institutional research as one more piece of evidence that a college is alive to change and is continuing to evaluate itself. Another way of saying this more specifically would be to raise three questions:

1. Is the college staff asking of itself a number of significant questions?
2. Is it pursuing the answers to these issues in a systematic fashion?
3. Are the conclusions to these questions recorded in a readily usable manner?

In short, I am asking whether the college has indeed tried to <u>determine</u> how well it is meeting its own goals.

Key Areas for Self-Study

Now to a few observations about the issues to which colleges have addressed themselves, the care they've used in conducting these evaluations, and the manner of their recording. I offer these as personal observations, not Commission policies.

It seems to me that a number of surveys, for example a study in progress by Lee Swanson, have pointed out that frequently we ask significant questions about -- and expend considerable energy in -- matters of administration and organization. We also prepare materials about our students, although perhaps much of this is a matter of counting and cataloging. It appears to me that we do not so frequently raise significant questions about our <u>methods of instruction</u> and <u>their effectiveness</u>.

Now an observation on the care exercised in answering the questions. I am not suggesting that every question raised must be met by a full-blown research study. Perhaps it is appropriate for many of them to be answered by a pooling of opinion in a somewhat informal face-to-face setting. This may still qualify as careful treatment. There are some questions to which we should address ourselves with rigorous methodology; others might better be handled a bit less formally.

Finally, I fear we arrive at perfectly legitimate conclusions in many instances but do not commit them to paper. In the process, we may lose the good judgments reached by participants in the study.

May I summarize my personal feeling on this issue by presenting these opinions:

> It is neither the intent nor the province of the Accrediting Commission to tell a college that it must have a particular organization for institutional research. Neither does it contend that a college must provide ten reports or fifty reports of a given size or format. Rather, it appears to be suggesting that colleges should be in the business of asking searching questions of themselves. I would very much like to see more activity in the area of good one-page reports. Last night Lew Mayhew recommended four-page reports; I'd like to see good one-page reports covering questions raised, processes followed, conclusions reached, and appropriate action recommended.

DISCUSSION

In response to questions, Dr. Simonsen made these further points:

1. Frequently faculties object to periodic self-studies, because the answers are already known. Either too elaborate a study is made, when it is not even needed, or an institution goes through a fine study but doesn't get it down in usable form. The Commission is really interested only in having a college look at its own operations in an orderly fashion, to see if it is reaching its stated goals and objectives.

2. In answer to whether research should be centralized or decentralized, my own feeling is that one person should be held ultimately responsible, in order to see that the job gets done.

3. Studies on the effects of instruction, and validation of procedures, are more useful in the accreditation process than is the submission of a fact-finding report.

4. It would be quite appropriate for this group to suggest that the Commission be more sensitive to institutional research. Library people have been active in recommending standards for accreditation. The Commission would probably look at the research being done, but would not come with a checklist. In the past, Accreditation has had real impact on General Education and Improvement of Instruction. The position of Dean of Instruction was created in junior colleges partly as a result of the accreditation process. Something like this could happen to institutional research.

Second Session: YOUR INSTITUTIONAL RESEARCH PROGRAM: How Little--How Much?

The Coordinating Council for Higher Education Answers...

ALGEO BRILL, Vice President, Yuba College, Marysville, California
Member, CCHE Technical Committee on Admissions, Retention and Transfer
Member, CCHE Technical Committee on Enrollment
Member, CJCA Special Committee on Attendance and Enrollment Studies

I should like to make very clear at the outset that, although my part of this morning's program is billed as "YOUR INSTITUTIONAL RESEARCH PROGRAM: How Little--How Much? The Coordinating Council for Higher Education Answers...", I can in no way speak officially for the Coordinating Council for Higher Education.

The Coordinating Council employs a full time staff, headed by Willard Spalding as Director. In order to be adequately informed, and to have the opinion of all of the segments of higher education in the State before making recommendations for adoption by the Council itself, the staff utilizes the technique of having several standing "Technical Committees," one for each major area of the Council's concern. Each of these technical committees, chaired by a CCHE staff member, has a member, or members, representative of the University of California, the State College system, the junior colleges, and the private institutions of higher education.

It is important to understand that these committees function in an advisory capacity only; that is, they are advisory to the staff of the Coordinating Council which is in turn advisory to the Council. As such, usually there are no formal votes taken in these committee meetings, the recommendations usually being developed by consensus, and the committees themselves can have no "position" as such.

It is as a member of two of these technical committees that I am entering into this discussion with you this morning. I serve on the Technical Committee on Admissions, Retention, and Transfer and on the Technical Committee on Enrollment. Incidentally, I am also the chairman of the CJCA Special Committee on Attendance and Enrollment Studies. It is in this capacity that I have been trying to keep the colleges informed through the "Memos" issuing from my office.

So much for background. It is important that you understand my comments are really those of an "outside observer" rather than those of an official spokesman.

I don't think I have to take your time this morning, unless you have questions about them later, to review the statistical data which the actions of CCHE have already resulted in your having to compile and report. I have tried to keep the individual colleges warned, as far in advance as possible, of what they should be doing to prepare in advance for demands made upon them for data because of CCHE activities.

Probably the best service I can give in this initial presentation is to try to set the requests of CCHE for data in perspective. From some of the complaints I've heard, either directly or indirectly, I believe many of us are unsympathetic to the Council and the staff without realizing that they are really the innocent middlemen in a situation to which we ourselves have contributed, and continue to contribute.

If you will recall the time of the Master Plan study, we were very active trying to insure that the junior college be recognized as an equal partner in public higher education, and we were successful. The Donahoe Act, with which we are so pleased, did recognize this partnership. As a result of the same Master Plan, however, the Coordinating Council for Higher Education was established with certain responsibilities for the whole program of California higher education - you can review this "Structure, Function, and Co-ordination" of higher education by reading Chapter III of the Master Plan. I might also call your attention to Henry Tyler's article entitled "Full Partners in California's Higher Education" in the latest (March, 1965) issue of the AAJC Junior College Journal. In order to allow the council to fulfill the responsibilities with which it is charged, the plan also specifies "THE COUNCIL SHALL HAVE POWER TO REQUIRE THE PUBLIC INSTITUTIONS OF HIGHER EDUCATION TO SUBMIT DATA ON COSTS, SELECTION AND RETENTION OF STUDENTS, ENROLLMENTS, CAPACITIES, AND OTHER MATTERS PERTINENT TO EFFECTIVE PLANNING AND CO-ORDINATION."

Let me read to you from page 76 of the Publication, A Master Plan for Higher Education in California, 1960-75: "It is recommended that each segment strive for greater uniformity in policy and practices on probation and dismissal; that among segments where the programs are comparable, an effort be made to secure uniformity in policy and practices on probation and dismissal; and that each segment report annually full retention statistics to the co-ordinating agency." Again in the study's publication Selection and Retention of Students in California's Institutions of Higher Education, page 59, "It is recommended that junior colleges establish a more uniform set of policies on probation, dismissal, and minimum grade requirements for graduation." I'm sure you are all aware of the discontent now being expressed by individual junior colleges, and the student personnel group, over the Council's having concerned itself with this question of uniform standards, and the proposed action of the State Department and State Board in response to the concern of the Council. Yet to be realistic, can we expect the Council, legally established to overview the functioning of the Master Plan, to ignore some of the recommendations of the plan simply because we say we don't like them?

I mention these example items to remind you that the Coordinating Council is charged with responsibilities which it must fulfill, and that in order to fulfill them it must have data upon which reasonable decisions can be made. We might individually and personally disagree about whether certain areas should or should not be the concern of the Council, but I honestly believe that a study of the Master Plan--the Donahoe Act--will reveal that all questions with which the Council and its staff have concerned themselves do turn up as specific charges to them. At least I have become convinced of this. Last night our keynote speaker, Dr. Mayhew, commented on how few facts we have about our institutions and warned us against using impressions as facts. The CCHE is in this position with regard to higher education and we must expect the staff to turn to our research officers for the facts. Let me also refer you to the latest CCHE publication of February, 1965, entitled "Budget Report to the Legislature," pages 68 through 71.

As one of the advisers on these committees, I can report two favorable items to you. First, the staff of the Council has always appeared to me to be most sympathetic to the junior college. I count Willard Spalding as one of our real friends, as I do Court Washburn, who is with us today. Second, the junior college segment has been called upon to furnish considerably less data than either of the other two segments of public higher education. Also, whenever there was discussion in the meetings about data which would be requested, the staff was always willing to delete items which we could show would not lend

themselves to meaningful analysis. I should add that, in my opinion, the University and State College representatives have also been quite reasonable and understanding when discussing junior college problems and limitations.

Turning to specific data which I believe should be included in your regular institutional research program to serve the needs of the Council, you can be assured that you will need either regularly or periodically to supply the data listed in my "Memos" to you, and in the 1965 CCHE "Budget Report to the Legislature" just referred to. Additionally, you should keep in mind that as we ask for more and more State financial support - as an example, the new Junior College Construction Act - the Council is going to be called upon to give its recommendation. These recommendations must be based upon analysis of data, and the data must come from you. I expect, therefore, that you should plan to have quite comprehensive research programs compiling much more detailed data on costs; student enrollment, retention, and graduation; faculty; and perhaps particularly facility capacity and utilization.

I'm sure you've been reading in the newspapers, and hearing on the air, the debate between Legislative Analyst Alan Post on one hand and the supporters of higher education, including CCHE and Willard Spalding, on the other, concerning the required level of financial support for higher education; and you have noted that Spalding was particularly singled out by Post for his advocacy of a higher level of support for the junior colleges. To back up such advocacy, now and in the future, he's going to have to be able to put facts on the line - and you're going to have to dig out those facts; and more important, have them ready when they're needed. My suggestion to you is ANTICIPATE!

The question on our program today reads "How Little? How Much? My answer is "Very Much," all you can afford. Let's not be penny-wise, pound foolish.

DISCUSSION

In response to an observation that the CCHE and legislators appear to be making recommendations for action before junior college research findings are in (or even before research is started, in some cases), Mr. Brill pointed out that the CCHE has been in operation for five years, and that junior colleges in many instances have not complied yet with the basic requirements of the Master Plan. More prodding from the Coordinating Council may be expected in future, especially in the area of producing data, despite hostility on the part of some junior colleges toward the requests for complex data.

Second Session: YOUR INSTITUTIONAL RESEARCH PROGRAM: How Little--How Much?

The State Department of Education Answers...
CARL GEORGE WINTER, Consultant, Bureau of Junior College Education

Summary of Dr. Winter's Comments:

There has been some debate on the subject of data-gathering, and some resistance to the number of forms you are being asked to fill out and return. A recent investigation at the State Department of Education revealed that through our various Bureaus we are requiring a total of 121 forms to be completed and returned by each junior college. (This compares with a total of 98 in 1962.) I have brought along the list and each of you may have a copy to take back to your college. It is current as of March 10.

I have also polled the various Bureaus and services in the State Department of Education to find out what kinds of additional studies their staffs would like to see done by college research workers. It makes a fairly long list, and should keep you busy enough!

Here is a summary of what we'd like to have you do:

Bureau of Administrative Services:

1. A study of how to coordinate statistical activity and arrive at a determination of meaningful, necessary, and reasonable statistics.
2. A study of terminology in laws to make them clear to all.

From the Bureau of Audio-Visual and School Library Education:

1. A system to improve film library interchange--by computerizing the service for all junior colleges.
2. Develop an index method which would give needed information and description of materials on cards.
3. Space recommendations for instructional centers--perhaps a survey of existing centers with recommended minimum for new centers.
4. Just what experience is needed to give adequate proficiency in the area of audio-visual media for a credential?
5. A new copyright law is being studied by Congress which will tighten up regulations on use of material--TV duplication--use of magazine pictures from books. (Each district should obtain a copy of the law and send suggestions to their Congressmen. If the law is passed, a study by each institution will be needed concerning its implications.)

From the Bureau of Business Education:

1. This Bureau requests "true courses of study" for courses taught, including topical outline of subject matter and teaching techniques used.

From the Bureau of Education Research:

1. Study of the number of administrators actually needed and their proper roles in junior colleges.
2. Further studies of motivation of junior college students.

3. Early identification of students' interests.
4. Study of state financing and "anatomy" of the junior college.
5. Identification of personality clusters that make best junior college instructors.
6. Comparison of [curriculums? of] first two years of liberal arts colleges with those of junior colleges.
7. Identifying amount and type of [State Department of Education?] services that provide optimum value for junior colleges.

From the Bureau of Health Education, Physical Education, and Recreation:

1. This Bureau would like to have periodic research done on junior college use of the civic center community recreation tax.
2. What recent capital improvement has benefited physical education and athletic programs?

From the Bureau of Homemaking Education:

1. Annual report of the number of home economics majors, by sexes.
2. Report of nonmajors in home economics classes, divided by sex.
3. Names of home economics courses offered in junior colleges.
4. Enrollment by sexes in transferable home economics courses.

From the Bureau of Industrial Education:

1. Effective evaluation of vocational education in the individual junior colleges (due January 1, 1968).
2. A study of articulation among vocational education programs in high school, adult education classes, and junior college.
3. Peace Officers' Training:
   a. How many students who completed the zone schools or junior college police science programs now hold administrative or supervisory positions in law enforcement agencies?
   b. What kind of training do law enforcement officers consider most valuable--local police science courses (such as those given by the Highway Patrol Academy) or courses given on a national level (such as those offered in FBI schools)?

From the Bureau of Pupil Personnel Services:

1. A statewide survey of pupil personnel programs.
2. How are appropriate courses identified and provided for adult and part-time students?
3. How best can programs of counseling and departmental advisors be developed?

From the Bureau of School District Organization:

1. What is the best method of predicting population for junior colleges?

From the Bureau of School Planning:

1. This Bureau points out that service is personal; assistance should be asked early, from purchase of site right through to completion of building.

From the Bureau of Special Education:

1. A study needs to be done on extent of deafness in junior college students and on what can be done to help deaf students.
2. Surveys of handicapped students presently enrolled--what degree of success or failure do they have in pursuing junior college education.
3. Surveys of handicapped students in the high schools in junior college districts - how can they be aided by junior college education.
4. Studies of factors that preclude or interfere with getting a junior college education (and how to overcome them).
5. A study of the cost of providing residence facilities for handicapped students in junior colleges.
6. Review of innovations in junior college offerings in fields of special education--scholarships and loans, etc., to be repaid by teaching the handicapped.
7. Facts on planning needed for area around schools that are building or renovating to help handicapped.
8. What specially needed resources such as Braille and records are generally available for handicapped youth.
9. Work-study programs for handicapped need to be developed.

From the Bureau of Teacher Education and Certification:

1. What proportion of teachers are now teaching in their major field? in their minor field? How many still teach on the old type of secondary or junior college credential?
2. How may teacher training institutions best be alerted to future needs in time to develop necessary teaching innovations?
3. What teacher preparation is of value to teachers in junior colleges?
4. Why do individuals want to teach in junior colleges and how do they secure such positions?
5. How many junior college instructors begin their teaching in junior colleges, begin teaching in high school, begin teaching in elementary schools, begin teaching in four-year senior institutions?

From the Commission on Equal Opportunities in Education:

1. This Commission recommends a study of ethnic background of junior college teachers.
2. More research in intergroup relations.
3. What is a desirable ethnic balance in school enrollment?

DISCUSSION

In response to a query about the Bureau's plans, Dr. Winter made these replies:

1. We do indeed need more people; we are getting a new man in Pupil Personnel services, and one in Vocational Education.
2. We have made little headway toward centralizing fact-gathering in the Bureau, because of staff shortage.
3. It is possible that error may become institutionalized when recommendations are based on the modal approach rather than on validity studies. Sometimes we see what the majority of schools are doing, and then make that a minimum recommendation. I imagine that the recommendations of the original Master Plan for uniformity of admission and retention standards in the tripartite system will not be implemented. It would be unrealistic.

Presiding Officer Leslie Wilbur, closing this session, suggested that an upper limit of 175 forms annually be set by the State Department of Education, making one form for each day of instruction. He expressed hearty approval of a recent occurence: an organization promised to send a small check to him when the form was returned. "The form became, in this instance, not the usual source of apprehension and deep depression but rather a source of jubilation."

GROUP SESSION - 1 **GETTING IT DONE IN THE SMALL JUNIOR COLLEGE**

LESLIE WILBUR, President, Barstow College
Member, CJCA Committee on Institutional Research

Summary of Dr. Wilbur's comments:

Barstow College is, I suspect, reasonably typical as a "small college." However, each institution has some unique characteristics. Let me include some brief statistical information which will enable you to relate our situation to your own.

Our college is in the second semester of its first full year of operation on its own new campus. We offer, in addition to the regular day program, an extended day program from 7 o'clock to 10, four evenings a week. We have approximately 900 student registrations, a figure down approximately 200 from the previous year. There are approximately 350 day students and 250 full-time students, both figures considerably larger than they were when the College commenced operation "after hours" on the high school campus in 1960.

Our teaching staff includes a fraction over 13 full-time and approximately 20 part-time instructors. Among the non-teachers are one full-time librarian, a half-time nurse, two counselors on two-fifths counseling load, one dean, and one president.

Flexible Staff Assignments

Institutional research at Barstow College is generally - and logically - developed in response to the immediate pressures of staff responsibilities. The responsibility for research, although it restsultimately with the president, devolves quite often to the dean of student personnel, whose duties include those of the registrar. At the administrative level, in doffing and donning our various duties, the dean and I resemble the characters in the familiar vaudeville act who perform their routine with two heads and a half dozen hats, changing and exchanging hats in a routine long familiar to themselves but bewildering to the audience.

Much of the appeal of such an exhibition lies in the anticipation of error, and the probability of errors increases the longer the performance is sustained. More heads have to be found for institutional research in this small college.

Of necessity we have tapped various staff members for special responsibilities, some of them responsibilities on a short term basis, others of long duration. Using research in the broader, less formal sense of analyzing institutional needs and arriving at a feasible answer, the college leans heavily on the energies and abilities of the teaching staff.

The members of the teaching staff have been responsible for much of the determination of teaching facilities, staff, and program. This involvement has placed a heavy burden on several instructors, particularly those who serve as department head and instructor in more than one area. Naturally they work closely with the administrative staff, but their research has been largely self-directed.

Faculty Climate

In addition to their contribution as researchers well-trained in subject matter, they have helped to develop a faculty climate of voluntary contribution. Their initiative in suggesting research is vital to the college, especially in the years of planning, building, and equipping a new campus.

Another valuable source of research has been our librarian. In addition to his responsibility for the library, he has worn the hat of director of audio-visual services. This assignment has required a continuing analysis of instructional and community service needs for audio-visual equipment and supplies. Beyond that service he has also carried the burden of developing the library offerings in those areas which, primarily because there was no full-time interested teacher on our staff, were left neglected. As a result of his efforts, the shelves are stocked with a balanced coverage of subject matter areas.

Barstow College has not had any elaborate research projects in the past several years. However, there are two annual reports which we have found extremely valuable. These have been prepared by the dean of student personnel.

One is an analysis of our student population to determine who they are - men or women, part-time or full-time, local or otherwise - a composite picture derived from the available data. Although we do not have data processing equipment, our enrollment is still small enough to offset its absence.

We also make a careful study of our grades, by individual class, instructor, department, and total institution. This has been a source of reassurance during the years when there were very few reports from transfer students. We know, for example, that our grading standards and our retention have been climbing simultaneously. Each semester the entire full-time teaching staff meet to receive, study, and comment on this report. We feel it has been a useful lever for raising individual teaching standards.

There are a considerable number of research projects which we recognize as potentially valuable and which we feel are long overdue. Our problem is not one of a dearth of ideas, but rather a shortage of hands - and heads. We have in common with the larger colleges the desire to know more about the whys and hows of our college. We recognize that many of our decisions could be improved, had they been preceded by more study. Hopefully, as Barstow College grows and our staff ratios are more flexible, we will be able to release more time for research. In the meantime, we continue to get "it" done as best we can within our limitations.

GROUP SESSION - 2 GETTING IT DONE IN THE LARGE JUNIOR COLLEGE

HERBERT L. SWANSON, Coordinator of Research & Placement, El Camino College
Member, CJCA Committee on Institutional Research

Summary of Mr. Swanson's comments:

Out of the horizon in recent years has come a new term applied to an old process, meaning many different things to many people, but evolving into a professional technology that is vital to the well-being of education at all levels and especially the junior college as we know it -- INSTITUTIONAL RESEARCH.

To some this means an unsophisticated process of applying available knowledge to decision making only; to others perhaps it means making studies as the need arises, often very unscientifically. After many years of work in this field, to me it is almost a way of life. It means the development and maintenance of a well-organized and coordinated program of data-gathering, recording, studying, and reporting in order to continually evaluate and improve the operations of the institution in all of its aspects through the efforts of all of its members.

I know of no instance where such a program is very highly developed, but many institutions are making a start -- and only through such a program can the college be the dynamic vital force that it should be in the community.

Several ingredients are required for the success of the Institutional Research program, and must be mixed in varying patterns to meet the needs of each institution and situation. Some of these include:

1. A basic philosophy of the "inquiring mind" that is clearly established, accepted, supported, and participated in by all -- students, staff and faculty, administration, governing board, and community. Such a philosophy - not imposed - will provide an atmosphere conducive to everyone continually striving for excellence.
2. An organized, coordinated program with efficient leadership that provides stimulus, coordination and guidance in accomplishing the necessary tasks.
3. Provision of required tools to do the job -- manpower which is unlimited in a college staff of trained specialists if they are allowed to apply some of their time, talent, and energy to this work; finances which can be very minimal and still accomplish much; and, of course, space, equipment, etc.

Although I was to cover "how to get it done in the large junior college," I believe that the good institutional research program is as vital in a small institution as in a large one -- public or private -- and that the same principles apply.

History

This service was started at El Camino College in 1959 as a result of recommendations of the Accreditation Committee and under the aegis of the new president, Dr. Stuart Marsee. Until 1962, it was a combined assignment with teaching and other instructional services, and relatively little time was available for Institutional Research.

During 1962-63, a half-time administrative intern and Kellogg Fellow in the U.C.L.A. Junior College Leadership Program was given the responsibility for Institutional Research and Placement. The following year, the full-time position was authorized by the Board as Coordinator of Research and Placement. A secretary was added to the staff, an office was provided and equipped and a small but adequate budget was allowed for supplies and publications.

Activities - 1963-64

1. Research
   a. The major activities in this area were reported to the faculty in President's Bulletin No. 56. However, approximately 75 additional study titles have been assigned numbers and an up-to-date listing will be published in early April.
   b. A system of files has been developed as follows, and an inventory has been made, and it is hoped that in the near future a catalogue of holdings can be published in order to make these materials available for use, and obtain help in further material collection:
      (1) Original file copies of all study reports on the Master "A" List (one-time studies) and background materials of the above reports.
      (2) Extra copies of study reports for dissemination.
      (3) Mimeo or ditto masters for most study reports.
      (4) File copies of Master "B" List reports. These include routine continuing El Camino reports such as yearly room utilization; grade surveys; placement test summaries; foreign student reports; class counts; and many others as indicated in Bulletin No. 56.
      (5) El Camino College data files, including other material available such as minutes; bulletins; instructions; publications; board materials; budgets; manuals; transfer grades; course outlines; and many others.
      (6) Data from and about other junior colleges.
      (7) Subject files. These are a collection of materials on a wide variety of subjects - particularly areas of potential study. This is difficult, but we're working on it.
      (8) Copies of questionnaire answers and summary reports, if returned. We're trying to centralize this.*
      (9) Give away materials. Extra copies of a wide variety of El Camino materials to be distributed in answer to requests. We've had four printings of our Teacher Load Study - a 3-year project, involving 20 people.
      (10) Publications and periodicals of many sources dealing with, or pertaining to, institutional research.
   c. Assisted with 12 on-campus studies by graduate students; filled 60 off-campus requests for reports and materials.
   d. Coordinated and assisted in conducting the El Camino portion of the State Cost and Statistical Analysis Study sponsored by the Coordinating Council for Higher Education and the State Department of Higher Education.
   e. Assumed a variety of roles in the institutional research program of the college:

*Swanson: "Last year we returned 62 completed questionnaires. This year we have already had more than double that number. I don't know why this number has jumped so." George Ebey: "Probably because you answered 62 last year."

(1) Member of study committees -- Teacher load; Building.
(2) Chairman of study committees -- Library; Plant.
(3) Consultant to study committees -- Nursing; Team Teaching; Art Building Planning.
(4) Assistant in editing Accreditation Application; Faculty Handbook; President's Report.
(5) Conduct or assist in conducting studies -- Probation; Sabbatical Leave Practices; Gifted Practices; Course Offerings; Administrative Organization Patterns.
(6) Coordinate records and collect data.

f. Thirty-eight Institutional Research studies were completed and recorded on master list.
g. Developed and supervised, with the Director of Student Personnel, the administrative intern program.
h. Represented the college at the meetings of the Southern California Institutional Research group, and as a member of the planning committee for the UCLA Spring Conference on Institutional Research. Also appointed to the CJCA Standing Committee on Institutional Research.

Plans

1. Personnel:
   Intend to make Coordinator's assignment full-time institutional research with additional secretarial/clerical help. Placement and institutional research will both be full-time.
2. Facilities:
   Increase space available for this function.
3. Study area projects envisioned for immediate future.
   (a) Correlation and prediction studies in use of placement tests.
   (b) Follow-up studies of vocational graduates, transfer students, and probation students.
   (c) General education offerings and requirements, and their relation to graduation requirements. This will be our major study next year.
   (d) Long term enrollment projections.
   (e) Immediate building plans for Math-Engineering Building, and Art addition.
   (f) Study of campus communications media.
   (g) Study of program provisions for superior students.
   (h) Study of college records for data processing applications.
   (i) Study of college committee structure.
4. Additional Projects:
   (a) Plant identification and inventory system.
   (b) Development of Counselor's Handbook.
   (c) Revision of Classified Employees Handbook.
   (d) Development of an El Camino College Data Handbook (based on summary of questionnaire data).

Inter-Institutional Responsibilities

1. Help others gather data by completing inquiries as efficiently and quickly as possible.
2. Disseminate data, reports, and other information when requested or otherwise appropriate.
3. Cooperate in joint studies when possible and appropriate.
4. Accept other responsibilities which help "promote the cause" -- preparation of materials, speaking or consulting, attending meetings, serving on committees.

Problems

1. Questionnaires (number, quality, etc.)
2. Base of data is difficult to develop and maintain.
3. Personnel - little released time for faculty (released time is a real issue and Academic Senate will probably make recommendations on this subject); schedule conflicts; low interest; often little training; need for clerical help.
4. Record-keeping - gaps; duplication; use of data processing.
5. Communications - circulation; files and research; library materials; "What's going on?" - reporting.

DISCUSSION

Some concern was expressed among participants about the sort of image that a director of institutional research should project. Should he have a line or staff position? Should he be making recommendations, or simply reporting findings? It was agreed that the "research" image is often damaged by the fact the office makes studies to help justify administrative actions, rather than to help the working faculty.

Mr. Swanson's reply:

1. As for the image, I suggest it's crucial to build an image of service. Give help at every request of faculty and students. Build a research data library; make everyone welcome to use it. Permit others on committee to make the recommendations instead of making them yourself. Follow up every project that you hear is being done on campus, and offer to write it up or disseminate the findings.

George Ebey was asked for comment on the "large college" research structure at College of San Mateo. Dr. Ebey's reply:

1. The organizational structure of a college tends to determine what you can do. At CSM the Faculty Senate recommends membership of the President's Advisory Committee. This body in turn nominates members for the following four committees, all of which undertake studies in their special fields: Committee on Instruction, on Student Personnel, on Evening College, and on Professional Personnel. My office of Research and Planning is outside the operational field. I see these two behaviors as being essential to my assignment: 1) expressing myself fully and freely to the president, when I think he's wrong; and 2) giving my full support to any official decision that's finally made.

Third Session: RESOURCES FOR INSTITUTIONAL RESEARCH

Presiding: Herbert Lee Swanson

At the Center for the Study of Higher Education at UC, Berkeley...
DALE TILLERY, Associate Professor of Higher Education
Assistant Director, Junior College Leadership Program
Research Associate, Center for Study of Higher Education

Summary of Dr. Tillery's Remarks:

The several programs and activities on the Berkeley campus related to junior colleges suggest that it be conceived as an informal center for junior college education. Several of these activities are of particular concern to those of you who are bringing leadership to California junior colleges in the area of institutional research. The agencies or programs at Berkeley which should be of particular interest to this group are the Center for the Study of Higher Education and the Junior College Leadership Program. I shall tell you briefly about both as they are concerned with research.

Center for the Study of Higher Education

The Center, which was established in 1956, has had two major research emphases up to the present time, namely the student in higher education and the junior college. You are aware, I am sure, of some of the major works which have come from these two fields of investigation, but let me mention a few. Leland Medsker's book on the American Two-Year College, The Junior College: Progress and Prospect, has stimulated a great deal of research at the local college level as well as in more formal research settings. You may also know that he is presently conducting a new nation-wide study of junior colleges which will ultimately lead to a new book. Clark's book, The Open Door College: A Case Study, represents a very different kind of study and remains the major case study of a single junior college.

The other major publications from the Center have been McConnell's A General Pattern for American Public Higher Education, Glenny's Autonomy of Public Colleges: The Challenge of Coordination, and Darley's Promise and Performance: A Study of Ability and Achievement in Higher Education. In addition, a number of educational studies are in, or are near the publication stage. You will be particularly interested, I think, in the Knoell and Medsker study of junior college transfer students. A new report of this study, Articulation Between Two-Year and Four-Year Colleges, is now available for distribution. Medsker and Trent are putting finishing touches on the study of ten thousand high school students in sixteen communities who were followed through the college years. They were particularly concerned about the role of junior colleges in providing access to higher education. From these and other studies will come new research in the problems of access to higher education, particularly in state systems with differentiated institutions. For example, we are now planning longitudinal studies which will help us understand the decision-making process about college going as far back as the junior high school years. Samples of students in several states will be followed from the ninth grade through the college years.

Much more is going on at the Center that you will want to know about, but this brief report suggests its major threads of investigation. Many of you have called on the staff at the Center for ideas as you design or use research instruments. Others have had occasion to use the reports of various projects

or activities of the staff. It is possible that in the near future, the Center will be in a position to be of greater service to those of you in the field as you develop your own research activities or draw more fully on the continuing research being done at the Center.

Junior College Leadership Program

The Berkeley program is one of ten Kellogg-sponsored programs across the country for the preparation of junior college administrators and for service to the junior college in matters related to staff leadership. Because of the service nature of the Junior College Leadership Program at Berkeley, it has only limited resources related to the interest of your organization. Nevertheless, the increasing body of research represented by dissertations on topics relevant to junior college education, should be of value to you. A number of dissertations already completed have been discussed widely in junior college circles up and down the state. They deal with such diverse topics as faculty-administrative conflict in junior colleges, characteristics and achievement of various groups of junior colleges, and problems in the organization and functioning of junior colleges. Furthermore, the cooperation which you have provided doctoral students frequently results in data being made immediately available for your own local studies. As the years pass, this should be a fruitful area of continuing cooperation.

We have developed a "Kellogg Library" of materials concerned with junior college education which are often difficult to locate in college libraries. We continue to invite those of you in the field to use this library as you identify and pursue institutional research problems. Furthermore, those of us on the Junior College Leadership Program staff continue to serve the junior colleges of California as consultants or resource people.

Field Service Center

The staff activities mentioned above are frequently conducted through the Field Service Center of the School of Education. Over the years a number of important studies have been made of individual colleges and districts. In many cases these studies are concerned with master planning, long-term financing, and district or college organization. A number of these studies may constitute models or guides for some of the institutional research which you will be conducting.

Summary

Those of us concerned with junior college education at the University of California, Berkeley are deeply interested in your organization and the leadership you are bringing to an important aspect of professional activity in California junior colleges. To the extent that our community colleges are to continue the important role they have played in a changing system of higher education, it is imperative that decisions and education planning be based on research. We can scarcely continue the armchair approach to these matters if we are to serve the overwhelming numbers of youngsters who will attend colleges in the decades ahead. We not only wish to encourage institutional research in the junior college, but hope that we may play a productive role in cooperation with you. There is much to suggest that we have been of mutual service to each other in the past, and that we can profit even more from cooperation in the future.

At the California Teachers Association...

GARFORD GORDON, Research Executive, California Teachers Association

Summary of Dr. Gordon's Remarks:

Certain factors limit the amount and kind of assistance that the CTA can provide in the way of institutional research; other factors work in our favor by permitting us latitude in research that is perhaps not enjoyed by other kinds of offices. Let me spell out some of these factors, and the nature of research resources that the CTA can offer.

We are somewhat differently orientated than either the state department of education or the university centers. We are organized toward promotion of education at all levels, raising its status, and raising the status of teachers. We look at things with a concern more immediate than scholarly. We can be more responsive to immediate needs of institutions, and are less hampered by legislative caprice than other agencies. So far as research is concerned, we see ourselves as a standby agency to help fill gaps. We're glad to have the State Department of Education be the data-gathering agency, and the universities be the pure research agencies. Since we are active on so many levels of education, the junior college doesn't get much space in our publications. We maintain liaison with the NEA and the AASA, hunt up funding agencies for some studies, advise the agencies themselves on research needs, for funding purposes. Our chief asset is probably that we are a continuing organization, with continuity of both staff and projects. However, it must be acknowledged that we cannot do anything that could not be done elsewhere by another agency.

1. We are independent, and can therefore undertake collection of data to suit the needs of educators and institutions, without regard to politics or bureaucratic policies or red tape. This is an advantage in some cases and may always become an advantage in any aspect of data gathering.
2. This independence also extends to furnishing of information on an objective basis and to giving unofficial advice and consultation service.
3. One of the major charges to the CTA Research Department is now showing results. The Department's activities in promoting research have contributed to greatly increased activity in this field. With increasing support from other sources, the Department is even more interested in helping the research cause along.
4. The actual facilities of CTA are designed to gather data rather than conduct other types of research. However, these research activities are sponsored by us and their results are collected, filed, and sometimes published. Research on teacher attitudes and opinions is done directly, either through sampling or in cooperation with professional associations or public agencies, usually school districts.
5. The Department publishes research in the California Journal of Educational Research. Articles calling attention to research developments and research needs are also published.
6. The Department collects reports of research -- mostly institutional -- done in California school offices, and publishes a classified and indexed summary annually.
7. It maintains a library which has as its major feature a large collection of materials describing or reporting activities, findings, and data generated by institutions, districts, associations (national, state, local),

and individual. While concentrating on California, significant material is sought from all over the country, and a close liaison is maintained with the NEA Research Department and the Educational Research Service of NEA and AASA.

8. Using these services, CTA prepares annotated bibliographies, summaries of findings, and evaluations of available research in response to requests from educators, educational institutions, and organizations.

9. On the basis of this experience, we have made some efforts to formulate statements of needed research and to encourage research in such fields by doctoral candidates, universities and others in a position to carry on research. We sometimes advise foundations contemplating funding projects.

10. The CTA Research Department is only doing a part of what needs to be done. There will probably be great expansion in university and governmental activities in educational research through increasing federal support. However, it is hoped and expected that the good foundation now in operation at CTA will be greatly expanded.

At the Bureau of Junior College Education...
CARL G. WINTER, Consultant

Summary of Dr. Winter's Remarks:

I'll be brief, because we covered most of what I have to say this morning. I might add in response to a question about developments in the State Department of Education, there are 18 Bureaus in the Department which either supply or ask you for information relating to junior colleges. The Department is trying to bring these services together into one Bureau. As we are set up now, the Bureau of Appropriations does regular financial studies on junior colleges, including such things as salary studies, but there is a year's lag in reporting the findings because of lack of staff. The Department of Finance is another good source of information, especially for data such as numbers of students.

The Bureau of Junior College Education is putting out a new Status Report on the junior colleges this year, for the first time since 1957. The report has been cut from 110 pages to 35. The original included the entire legal history of the junior college, and much of this will be deleted. This is available, although it will not appear in the report. Three data processing centers are being established by the SDE in different places in the state, each with its own satellite information centers for collection and dissemination of data.

We are also trying to develop a comprehensive system for storage and retrieval of students' school records. This will mean that a student will no longer need to bring all his records with him when he moves about. Registrars will send to the source for his records, and these will go back to the first grade. A prototype has already been set up in Sacramento. Data processing such as this will speed up the service functions of the Bureau significantly.

At the Junior College Leadership Center at U.C.L.A....

VERNON HENDRIX, Assistant Professor of Education, U.C.L.A.

Summary of Dr. Hendrix's Remarks:

The resources for institutional research at UCLA can be described in two major categories. The first category describes those resources which are currently available for one who wishes to make a trek to the campus. The second category describes what resources could be available in the future. The first category contains four items that might be mentioned:

Resources Currently Available

The Educational Administration Laboratory, housed in Moore Hall, contains a wide variety of documents relating to the administration of school districts and colleges. Almost all State Department publications are collected there. Particular emphasis is placed on finance, organization, and physical plant. Recently, materials pertaining to computer scheduling and data processing have been added to the collection.

The Junior College Administration Laboratory is housed jointly with the Educational Administration Laboratory. The materials contained in the Junior College Administration Laboratory are more comprehensive but less detailed. Publications and documents dealing with all aspects of junior college administration, including curriculum, student personnel, etc., are available from a large number of junior colleges across the United States. As you may know from having read the Occasional Reports published by the Junior College Leadership Program at UCLA, several aspects of junior college administration such as presidents' reports, various types of handbooks, and the establishment of junior colleges, have been dealt with. Documents on which these reports were based are on file. For California public junior colleges, all of the available statistics published by various state agencies are available in detail.

Another valuable asset contained in the Junior College Administration Laboratory, and one which is constantly becoming more useful, is the accumulation of seminar research papers and projects. These papers, written by students in Junior College Administration seminars, deal with a wide variety of problems and topics. Many of them, since they involve in-depth studies of individual colleges, or particular facets of an individual college, are particularly good source materials. Occasionally, papers written by students in other courses are also collected. These papers are maintained in bound volumes.

In addition to maintaining these papers, all seminar papers are submitted by students in multiple copies. Each semester, a listing of these papers is circulated to members of the Advisory Council of the Junior College Leadership Program at Los Angeles. Papers in which they are interested are then sent to them.

The Occasional Reports are available in the Bookstore, Associated Students of the University of California, Los Angeles. They include: 1) Frederick C. Kintzer. Faculty Handbooks in California Public Junior Colleges. 2) Frederick C.

Kintzer. Board Policy Manuals in California Public Junior Colleges. 3) Institutional Research in the Junior College--A Report of a Conference. 4) Frederick C. Kintzer. President's Reports in American Junior Colleges. 5) Establishing Junior Colleges--A Report of a National Conference. 6) B. LaMar Johnson. Islands of Innovation. 7) New Directions for Instruction in the Junior College--A Report of a Conference.

Mr. Lee Swanson has deposited his collection of approximately 2,000 institutional reports and documents, from over 300 junior colleges in the United States. These reports are useful for gathering information pertaining to any one college and contain a wide variety of statistics. It is particularly interesting to compare the results of similar studies done in a number of junior colleges.

The Institute of Government and Public Affairs maintains a wide variety of information pertaining to public administration of all varieties. Some of the more useful facilities, for possible use by Junior College Institutional Research personnel are:

1) A Survey Research Center which provides a trained staff for the collection and processing of data for research programs which depend upon the survey method. It assists faculty, graduate students, and selected public agencies; contributes to research methodology in survey work; and provides graduate training for students at UCLA. Its services include method selection and instrument design for the development of structured questionnaires, statistical sampling, field interviewing, and pre-machine data processing.

2) A Research Library of more than 100,000 documents, reprints, and periodicals relating to local government and public affairs is maintained in its Reading Room, 46 Library Building.

3) A Data Bank for data collected by Institute projects, as well as selected information gathered by government agencies and academic institutions. It will store and index material relevant to specific decision-making areas for which research is required, and incorporate information retrieval mechanisms to meet the needs of its users.

4)In addition, a large number of research projects, from a wide variety of areas on the campus, many of them interdepartmental or interdisciplinary in nature, are housed in this institute. Therefore, the body of information is constantly increasing, both in scope and depth.

Resources in Preparation

Moving to the second category of resources, UCLA has long been interested in institutional research. This has primarily been expressed through the activities of Dr. C. Robert Pace, Dr. B. Lamar Johnson, and others of us connected with the Junior College-Higher Education field. Most of this interest in institutional research has been directed at Higher Education. Recently, however, the area of administrative studies in the Department of Education, which is chaired by Dr. Erick L. Lindman, has proposed the establishment of a seminar dealing with "organizational research" at all levels of education administration. It is planned that this seminar will be offered for the first time in 1966, when the University goes on the quarter plan. In preparation for this, the current course, entitled "Research in Education Administration" is being experimented

with (assisted by our Ford Foundation grant) to see what form this seminar might eventually take. As of this semester, I have been assigned the responsibility for this course. The area of administrative studies intends that "organizational research" be another area of emphasis for doctoral candidates in education at UCLA, along with the already present emphasis on levels (elementary, secondary, junior colleges, etc.) and fields (finance, personnel, etc.)

In connection with the current course and the proposed seminar, the area also plans to develop a program of internships in organizational research. A number of the interns in Junior College Administration currently in the program at UCLA, are already, for all purposes, interns in organizational research. Their positions often formally indicate that they are to be primarily concerned with institutional research. Even when the assignment is not formal, much of their internship experience consists of institutional, or organizational research. It is the intention of the area of Administrative Studies to expand this type of program, with appropriate adjustments, into school districts that do not contain junior colleges. This plan would permit doctoral students to acquire specific training in this type of research, and combine the training with actual experience. As far as we can tell, everyone would benefit. The seminar and course work would apply on degree programs and the internship experience would apply on degree programs and administrative credential requirements. Districts, especially those which are unable to employ a full-time person in research, or which need to supplement their research departments with part-time personnel, would benefit. The interns would, of course, benefit financially.

In connection with this, plans are also being made for something in the nature of a "Research Service Bureau." This would be coordinated with the training and internship program in Organizational Research. For example, many smaller junior colleges would be willing to pay a few hundred dollars or more, for assistance in conducting research on problems of immediate interest to them. They would not, however, be in a position to hire either full or part-time personnel. We would hope to have a staff of "floating interns" that could perhaps distribute their services over a number of colleges as well as school districts, as needed.

Third Session: NEW RESEARCH ON OLD PROBLEMS

"A Study of the Problems in Implementing a Year-Round System in the Los Angeles Junior College"

JOHN L. REITER, Director of the Study
On leave as Dean of Admissions and Guidance
at the Los Angeles Valley College

Summary of Dr. Reiter's report:

The survey started July 9, 1964 and the conclusions were presented to the Los Angeles City Board of Education on March 11, 1965. The Board now has the survey results under consideration. Each junior college will receive a copy of the summary report soon.

Purpose of the Survey: To provide information bearing on these questions --

1. Is year-round operation of the Los Angeles City junior colleges educationally and financially feasible and desirable?
2. Assuming the principle of year-round operation is acceptable, which of the various all-year calendars -- the quarter plan, the trimester plan or the semester/extended summer term plan -- will serve best?
3. Should a year-round calendar be adopted, what are the problems involved in its implementation and transition from the present calendar?

Guidelines:

1. The process of selecting an academic calendar which differs from an existing calendar should begin with the understanding that "the calendar *per se* is simply a means to an end, and not an end in itself."
2. There is no one "best" academic calendar, although there may be one plan better suited to a given institution's particular needs and circumstances. Many fine colleges and universities operate effectively upon a variety of calendar plans.
3. Year-round operation under any calendar plan is not necessary until the existing (or planned) facilities cannot meet the demands of current (or anticipated) enrollments.
4. In any change or reorganization of the calendar, the quality of the educational program cannot be sacrificed solely for the sake of economy. Conversely, any approach that contributes to a saving in educational costs cannot be set aside simply because it breaks with tradition.
5. It is essential that faculty involvement in any calendar change be given full consideration, both as to the conditions of employment and participation in the curricular aspects of change and revision.
6. Due recognition must be given to the relationship of the supporting community to the implications of calendar reorganization.

The basic calendar plans, comparatively studied, were constructed on a school year of 48 weeks, 232 days of instruction, traditional Christmas and Easter vacations and all within the fiscal year of July 1 - June 30.

Primary Considerations of the Study:

1. The nature of the junior college and characteristics of its students.
2. Criteria for year-round operation.
3. The calendar plans:
   a. Quarter Plan (12-12-12-12)
   b. Trimester Plan (16-16-16)
   c. Semester/Extended Summer Term Plan (18-18-12/*or* 6/6)

4. The Coordinating Council for Higher Education "RESOLUTION".
5. Reactions and opinions of the faculties.
6. Preferences and opinions of the students (including questionnaire.
7. Articulation:
   a. Length of terms of instruction
   b. Calendar dates
   c. Materials of instruction
8. Curriculum planning and "conversion".
9. Rotational vs voluntary attendance
10. "Pressures"
11. Implementation and transition
12. Time-Tables
    a. University of California
    b. California State Colleges
13. Cost and Enrollments

Particular reference was made to the "time tables" for conversion by the University of California and the California State Colleges, and to a step-by-step process by which the relative cost and enrollment projections were estimated for each calendar plan in terms of 1963-64 enrollments and dollars

Conclusions:

1. In light of the advantages to be gained, year-round operation for the Los Angeles City Junior College District is considered to be educationally feasible and desirable, and -- assuming the District is willing to bear the added costs -- financially feasible and desirable.

2. The semester/extended summer term plan ("18-18-12" plan) appears to have greater advantages and fewer disadvantages for year-round operation of the Los Angeles junior colleges than either the quarter plan or the trimester plan.

3. Should the semester/extended summer term plan be adopted, it would appear desirable that year-round operation begin at the earliest feasible date (i.e., summer, 1966) Should the quarter plan or the trimester plan be favored, it would appear advantageous that the final decision be delayed for two to three years.

4. It would appear desirable that a standing committee be created to coordinate the implementation of any year-round calendar adopted for the Los Angeles junior colleges, and to study further certain concepts and problem areas defined by the survey. It is suggested that committee membership could well include students, faculty members, community resource personnel, and representatives from the various segments of the school system affected by a year-round calendar operation.

"Some Preliminary Data on the CCHE Cost and Statistical Analysis"

COURTLAND L. WASHBURN, Fiscal Specialist, California Council for Higher Education

Summary of Dr. Washburn's report:

1. A 46-page document containing preliminary tabulations of the Cost and Statistical Analysis was distributed to all participants, and the speaker discussed the statistical models and rationale for, and the implications of, each section. He pointed out that junior college figures were drawn up by the CCHE

staff, as there is no organization to provide them for the junior colleges. The state colleges also needed assistance in turning out their data. Only the university has a complete statewide organization to put data together.

2. Outlook

During the next fiscal year the Council will be concerned with routine studies along with several special studies, accomplished through advisory committees.

Routine Studies --

a. The general level of support (review of budgets, of formulas used to develop them, comparisons with other states, tuition policy, fee policy, new or improved programs).

b. Continuing review of the use of present centers of higher education and of need for additional centers (development and application of standards of space utilization, effects of year-round operation, progress toward year-round operation, comparisons with other states).

c. Factors affecting the need for and supply of faculty (salary, fringe benefits, working conditions, comparisons with out-of-state institutions, recruitment problems).

d. Factors affecting the flow of students into, among, out of, and through the segments (admission policies and practices, transfer policies and practices, articulation with secondary schools, projection of enrollments, diversion).

e. Continuing education (delineation of function, fees and costs, capital outlay).

f. Review of academic plans (allocation of functions and orderly growth, new programs).

g. Junior college financial support (standardization of accounting practices).

Special Studies, some done by contract --

These will include nursing education, library, part-time students, disadvantaged students, and junior college finance.

3. Long and Short-Range Goals in One Area of Study: The Flow of Students

a. Long-range goals will include studies of diversion and the 60/40 ratio; admission from top one-eighth and one-third; regular uninterrupted progress grades 13-16 of students who begin in junior colleges; and appropriate and consistent academic standards on probation, retention, admission, transfers, etc.

b. Short-range goals will include development of schedule and format for reporting requested information, reducing obstacles to transfer from two to four year institutions, and validation of admission requirements.

4. Issues of Special Concern

The Council staff is concerned with the potentially troublesome relationships with the segments that may arise from staff requests for information. A seemingly simple question may require many man hours for an answer. If such questions are asked when staff of the responding segment is unusually busy with internal problems, it is not received with enthusiasm.

The Council staff is also concerned with the potentially troublesome relationships that can result from demands upon segmental staff for service on technical committees. Here a segment may desire continuity of membership on each committee and a common member on all committees. Where this condition exists, demands upon a segmental staff member can become onerous.

Difficulties arising from these troublesome areas, or from other relationships with the segments can eventually affect both Council operations and the performance of the Council staff. When staff of a segment are unhappy about workload caused by Council or Council staff, their feelings may be communicated to members from that segment. On the other hand, if the Council staff cannot complete reports

on schedule, or can do so only by unusual last minute efforts, they are equally unhappy. Communicating such feelings to the Council is probably not desirable if it leads to even less desirable relations with segmental staff.

The Council should expect its own and its staff's requests for information from the segments to be as timely and as reasonable as its schedule of work and the expectations of the Master Plan will permit. The Council would expect its staff to develop relations with the staffs of the segments which will reduce tensions and become mutually rewarding. The Council staff would expect the Council to support the staff's reasonable and timely requests for information and to develop procedures and organization which will improve Council and Council staff relations with the segments and their staffs.

5. To focus properly these concerns, the staff is now being organized in a manner to coordinate all relations with segments. An annual schedule of requests for information from the segments is being developed.. The form and content of each request for information from a segment will have to be approved centrally.

A REPORT ON THE EXPERIENCES OF A SAMPLE OF JUNIOR COLLEGE GRADUATES

RICHARD V. MATTESON, Dean of Instruction and Curriculum, Laney College

Summary of Mr. Matteson's report:

The study I am reporting was supported by funds from the Bureau of Industrial Education, California State Department of Education.

In 1964 a 20% random sample of the 1960, 1961, 1962, and 1963 graduating classes of five junior colleges in Contra Costa and Alameda Counties was asked to report on experiences since graduation. Questionnaires were sent to 658 former students of these colleges and 461 (70.1) answered the request for information. 100 questionnaires (15.2%) were returned by the post office as undeliverable. 417 (63.5%) of the graduates surveyed were male and 241 (36.5%) were female. Their average age at graduation was 24.8 years and their average grade was 2.5 on a 4.0 scale.

The questionnaires returned by the 461 students indicated the following:

A. In college 72.2% considered themselves transfer students and 26.4% considered themselves terminal students; 1.4% did not answer this question.

B. If they were starting college again, 85.5% would choose a transfer program; 9.5% would choose a terminal program, and 5.0% were undecided.

More than half said they would urge all students who were able to to go on for the AB degree. 95.5% would recommend junior college for high school graduates.

C. The graduates' four most frequent majors in college were: Business, 23.4%; General Studies, 22.7%; Social Science, 15.9%, and Math/Science, 13.1%.

D. If they were to start again, their top four preferences would be: Social Science, 27.7%; Business, 24.4%; Math/Science, 14.8%; and General Studies, 8.0%.

E. Post graduate experiences of the respondents varied in time from one to four years depending on year of graduation. Their post graduate experiences included the following:

Further Schooling: 55.5% attended a 4 year college or university full-time; 31.0% attended a 4 year college or university part-time; 71.6% have taken some advanced college work full-time, part-time, or both

F. Those who transferred reported on the usefulness of their junior college experience in preparing them for upper division work:

Junior college experience was very useful	70.0%
Junior college experience was useful	24.6%
Junior college experience made no difference	4.9%
Junior college experience was a disadvantage	0.5%

These responses would suggest that in the students' views the junior colleges were fulfilling their transfer fuction.

G. Employment: 72.0% have held full-time jobs; 31.0% have held part-time jobs; 13.7% reported that they had spent time looking for work and over a third of these had found a position in less than a month.

H. Other Activities: 14.4% reported they had been full-time housewives; 11.1% reported military service (the most frequently reported length of service was 6 months).

I. Seventy-six percent of those who took full-time employment after graduation found their first position in Alameda or Contra Costa Counties, 17.5% found jobs within 50 miles of these counties, 4% in California but over 50 miles away from these counties, and 2.5% ouf of the State.

These responses would suggest that junior colleges should have vocational programs which meet local employment needs, since graduates, even in this time of population mobility, tend to get jobs near their homes and community colleges.

Second positions were secured by 70 of the graduates. Of these, 64% were in Alameda or Contra Costa Counties, 26% within 50 miles of these counties, 5.5% in California, and 4.5% out of the State.

12 graduates had held 3 positions and 4 had held 4 positions since graduation.

J. The graduates who found full-time employment reported the junior college had helped them on their first jobs as follows:

J.C. experience was:	Very Useful	Useful	Made no Difference	Was a Disadvantage
In getting the job	48.5%	24.4%	26.3%	0.8%
In keeping the job	26.0%	37.4%	36.2%	0.4%
In promotions on the job	25.8%	27.0%	44.7%	2.5%

327 graduates constitute the 72% of the respondents who have held full-time jobs.

K. We reported first full-time jobs by occupational areas as listed in the Dictionary of Occupational Titles. They include all first full-time jobs after graduation.

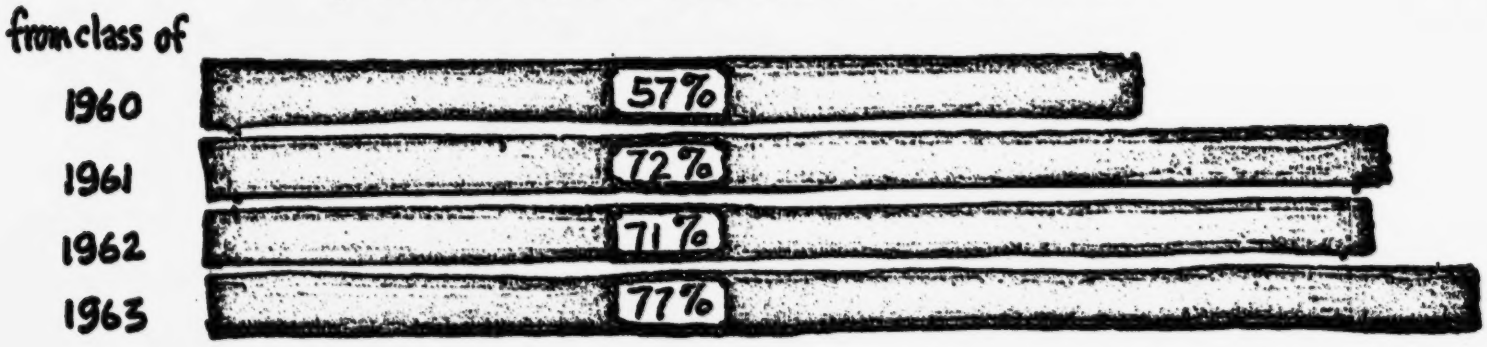
Occupational Fields	% of J.C. Graduates	Held by 10 or more persons reporting
Professional and Semi-professional Occupations	26.0%	Engineering Aide (16) Teacher (22), Nurse (17),
Managers	0.6%	
Clerical	28.5%	Office clerks and Secretaries (63)
Sales	11.4%	Sales clerk (16), Store manager (12)
Service	6.0%	
Agriculture	0.3%	
Skilled	14.0%	
Semi-skilled	12.0%	Electronics Technician (11)
Unskilled	1.2%	

DISCUSSION

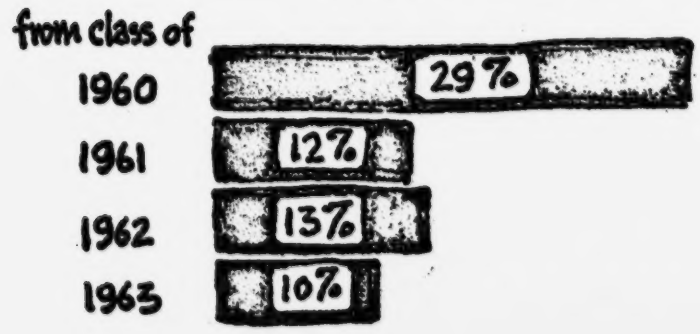
For the first three years after graduation, you can contact most graduates, between 80-85%. I think our high rate of response was largely a result of the five appeals we made in the letter. (See chart) We found that far from wanting to cut themselves off from their junior college experience, the graduates wanted to talk about it. A new study is being made now, which will involve 70% of all male graduates from three junior colleges in the class of 1961. This study will include items from the questionnaire I have discussed here, and in addition will explore such subjects as job satisfaction, relationship between junior college majors and job satisfaction, promotions, and on-job differences, if any, between graduates generally trained and those specially trained.

QUESTIONNAIRES MAILED IN JUNE 1964

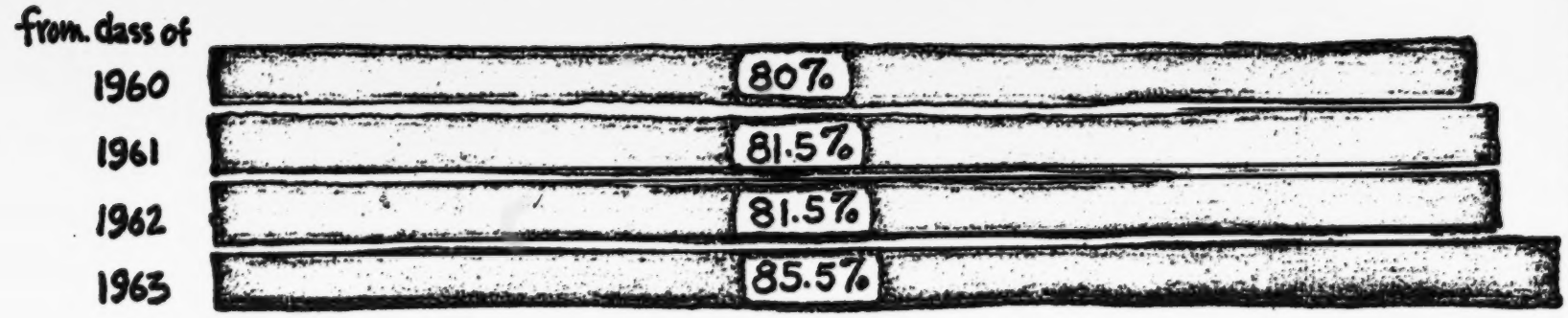
QUESTIONNAIRES ANSWERED BY GRADUATES



QUESTIONNAIRES RETURNED BY POST OFFICE AS UNDELIVERABLE



RESPONSES FROM QUESTIONNAIRES DELIVERED



SPECIAL APPEALS IN COVERING LETTER

1- COMMEMORATIVE STAMPS ON LETTERS

2- STATE and UNIVERSITY INVOLVEMENT IN THE STUDY

3- COOPERATION OF THEIR JUNIOR COLLEGE

4- SCIENTIFIC NATURE OF THE STUDY

5- USE OF STUDY TO IMPROVE JUNIOR COLLEGES FOR FUTURE STUDENTS

SELECTION OF VOCATIONAL STUDENTS: SOME SUCCESSFUL AND UNSUCCESSFUL PREDICTORS

MARGARET CRAWFORD, Assistant Dean, Counseling and Guidance
Los Angeles Trade-Technical College

Summary of Dr. Crawford's report:

Present day research points to the multi-factor nature of intelligence. In 1950 Los Angeles Trade-Technical College began a testing and guidance program based upon the approach that man possesses many different kinds of intelligences and that these intelligences are identifiable and measurable by standardized tests of relatively "pure" abilities. Using job analysis, the necessary intelligence factors for success in specific occupations are determined. Aptitude tests measuring these specific factors are combined then into aptitude test batteries to assess an individual's potential for specific occupations.

During the last 14 years Los Angeles Trade-Technical College has developed and validated such aptitude test batteries for some 55 trade and technical curricula. Testing over 8,000 applicants annually, norms are now of considerable size. The test batteries are derived from a core of 21 separate tests measuring various factors. Batteries are constantly subject to check, revision and improvement.

As an example of the program, let us take the development of the aptitude test battery used for the selection of Electronic Technicians. Job analysis revealed that the technician inspects and fits parts, makes calculations, reads prints and schematics, trouble shoots and works with others on a team.

A check on the psychological factors involved in successful performance revealed that measurement of verbal ability, space visualization, numerical facility, reasoning, dexterity and certain personality traits might be indicated. An experimental battery was administered to incoming trainees. Such a battery will contain more tests than the final battery developed from it.

Upon completion of the training period, instructor ratings of student performance in the course were correlated with aptitude test scores. The factors chosen for the final battery were those showing the greatest relationship with the teacher ratings and the least correlation with each other. Beta weights are determined by the Doolittle method and a conversion table changing all possible raw scores to standard weighted scores is developed. A percentile table is developed based on the total battery scores of the experimental groups, and ratings of high, middle and low are determined from above the 66th, between the 66th and 33rd, and below the 33rd percentile respectively. The cutting score is the 33rd percentile. Using the scores of fifty-five students, the following factors were selected for the final battery:

Science Research Associates, Mechanical Aptitudes Shop Arithmetic	r_{bis} .40
Guilford-Zimmerman Aptitude Survey, Part 6 Spatial Visualization	r_{bis} .43
Progressive Matrices (Non-speeded and non-verbal reasoning)	r_{bis} .43
Primary Mental Abilities Word Fluency	r_{bis} .38

This aptitude test battery administered to beginning students and requiring 1½ hours of testing time, was found to have a Multiple R .68 between the total battery scores and performance ratings of class achievement as determined by grades at course completion.

The selection process used involves both the testing program and an applicant-instructor-counselor interview. In the latter such factors as health, age, work experience and training are considered. In general, those applicants are accepted for training who make a total battery score equivalent to a total battery score at the 33rd percentile or above based on norms developed on the experimental group. Those applicants scoring below this cutting point are referred for further counseling. Such applicants are encouraged to investigate other offerings of the college more consistent with their abilities. Some may be counseled toward adult education classes to improve basic skills and then return for retesting at a later date. Each person tested receives the benefit of an individual review of his test results through the interview with the counselor and an instructor teaching in the curricula for which the applicant has tested.

The testing and guidance program at Los Angeles Trade-Technical College has been successful. Teachers feel that they are getting "better" students; they know more about the potentials of their students (the files are open to them while working with a counselor); there are fewer class interruptions; dropouts have decreased materially and charges of discrimination are practically non-existent.

The counseling service is available to those who have chosen an occupation, to those who have not yet discovered their vocational interests, and to those who find it necessary to retrain for another occupation.

Our experience leads us to believe that this method is valid for selecting vocational students. Cross-validation studies reveal that similar intelligence factors are predictive of success in similar courses offered at other institutions. However, while norms on individual tests are useful from school to school, the weighted total battery score will be useful only in the institution where the regression equation data are obtained due to variability in criteria.

I would like to review with you the application of trait-and-factor theory as we have used it in establishing and validating aptitude test batteries at Los Angeles Trade-Technical College.

As you will recall, this approach is based on the work of many noted researchers. Leading to this point of view was Spearman's hypothesis of the central G or general factor (a central core of knowing and seeing) plus an X number of specific factors; the work of Thorndike, who postulated three intelligences - abstract, mechanical and social - and the work on factored mental abilities by Thurstone. Malcolm MacLean in his article "Intelligences, Not Intelligence - Implications for Counseling" in the April 1953 issue of Education, points out that the report of the Office of Strategic Services "Assessment of Men" correlates the "term intelligence with the effectiveness of any system of mental functions."

Dr. MacLean makes a plea here that counselors working with the concept of "many kinds of intelligences each supported by multiform clusters of supporting abilities, interests, attitudes and value systems," will focus on the importance of the need for the highest development of every kind of talent among the people of a democracy to give the greatest personal satisfaction to the individual and the fullest service to the community, and that in so doing we will cease to try to compare things that have no rational basis for comparison. And to quote him further, "No man, though he wear a Phi Beta Kappa or a Sigma Xi key, is an expert in all things." But we

tend to think in these directions, so let us not be guilty of talking in terms of the "academic mind" or the "handed individual," but "let us assess all of the abilities, interests and potentials of the individual that we can possibly measure, going into finer and finer differentiation in order to do a better job of synthesizing and integrating these measurements into a judgment to assist us in assessing and in helping other human beings."

On the overhead projector I have examples of some aptitude test batteries used at L.A. Trade-Technical College to assist in the selection of trainees for some 14 different curricula. The criteria used were instructor grades. Biserial correlation coefficients were the coefficients usually computed. We now have available a program on the 1620 computer which gives us the correlations and intercorrelations we need, using up to 25 variables. /Dr. Crawford's prepared paper gave significant r's between specified aptitude test scores and instructor grades in 15 different technical programs at L.A. Trade-Tech./

In general, we find that we are able to do a better job in predicting areas requiring mechanical intelligence. We have had trouble in predicting successful ward performance among vocational nurses. We have had trouble using the speeded PMA with some of our people of limited verbal backgrounds, and in some areas such as Commercial Art, where a certain level of achievement is required, we have been unable to use a standardized test of art achievement and are developing and standardizing our own test for this purpose.

We have cross-validated our aircraft mechanic and cosmetology batteries, using scores of apprentice trainees as well as many high school, state college and junior college students. In general, we have found similar factors to be predictive: reasoning, spatial visualization, mathematics achievement, perceptual speed, etc. We feel uneasy about the inclusion of personality factors in the batteries. Our cross-validities have shown great variability in predictors, and the low intercorrelations found between ability and personality scores may result in heavy weightings of the personality variables in a battery. The weighting of the factors in a battery, of course, will vary due to the variability of the criteria. We have attempted some objective performance testing in this area, but it is slow and expensive work.

The need to assist our students to make wise vocational choices has been complicated by the ever-increasing numbers of young people knocking on our college doors and the need to train our people for more highly skilled technical fields in the face of automation-caused change. We offer the thesis that the multifactor approach to the construction of aptitude test batteries designed to predict successful trainability in specific fields is an economical and justifiable approach to at least one answer to a big problem - the identification of potentially satisfying life work within the capability limits of the human being we are trying to help.

Fourth Session: FUNDING YOUR STUDIES: FINANCIAL RESOURCES FOR INSTITUTIONAL RESEARCH

Presiding: George Ebey

DONALD W. JOHNSON, Consultant, Bureau of National Defense Education Act Administration

Summary of Dr. Johnson's report:

In addition to the research and development programs administered by the U. S. Office of Education there are other programs which make money available to junior colleges for the conduct of studies, the development of new curricula, and research projects. The most publicized sources of such funds are the various foundations which make grants in the field of education. Of these, the most prestiguous and the one with the greatest amount of money is the Ford Foundation. The administration of the Ford Foundation programs is characterized by certain sets of operating principles. These principles may be characterized as follows:

Public education is in need of significant institutional readjustment and reorganization. There is no research data which establishes that any single reorganization would be more valid than another. For this reason the Ford Foundation makes its grants for the conduct of experimental programs and their demonstration to schools in the geographical area affected. They are not interested in research as research is not relevant to their goals. They operate under the assumption that the experienced administrator can visit such a demonstration setting and reach a valid conclusion as to its appropriateness for his school.

The Kellogg Foundation of Battle Creek, Michigan, has invested more of its funds in the area of junior colleges than has any other foundation. For many years it has funded programs in the training of junior college administrators and in the development of programs for nursing and public health education. The current Director is Dr. Hollis Moore, formerly Dean of the School of Education, University of Arizona.

California has a large number of foundations, the best known of which is the Rosenberg Foundation in San Francisco (Executive Secretary, Mrs. Jackson Chance). California foundations typically make grants solely from income which averages $200,000 to $300,000 per year. In order to accommodate the diverse interest of the directors, the average grant is between $10,000 and $15,000. Other California foundations which may be worthy of exploration are Santa Barbara Foundation and the Brooks Foundation in Santa Barbara. The directory published by the Russell Sage Foundation contains a complete listing of all the foundations in the United States making grants in any field. In addition, the Russell Sage Foundation maintains a Foundation Center in New York and another at the University of California, Berkeley, which may be used for additional information regarding foundation funding.

At each office of the Director of Internal Revenue a complete file is maintained on all non-profit corporations and organizations. The income tax return of these foundations is available for review by the public and may present an additional source of information regarding new foundations as well as information regarding the nature of activities which they are currently funding.

At the risk of over-simplification, it should be pointed out that, with the exception of the Ford Foundation, most foundations limit their giving to single

areas of interest. This area of interest may undergo change over a period of time. For this reason it would be erroneous to assume that practices over three years ago are indicative of current areas of concern.

In addition to the foundations, junior colleges should be aware of the various resources available under programs administered by the state education agency. Among these programs are Titles III and V of the National Defense Education Act, the Vocational Education Act of 1964, and programs funded under state legislative action.

Recommendations

The current concern of the American public regarding education and its gradual assumption as the leading political issue makes it desirable that junior colleges consider the establishment of a position within their administrative structure to deal with the categorical and project-aid programs which might provide money for research and development efforts. If such a position is established, the individual selected to serve in this capacity should plan to spend at least one-fifth of his time maintaining contact with the various state and federal agencies administering funding programs, and becoming personally acquainted with the executive secretaries and representatives of the various foundations. Such an individual should be able to return the investment made in his salary and expenses at least ten-fold each year with what would otherwise be unrealized income.

DISCUSSION

Most funds come from the federal government and are administered by the state. There are many such federal programs supporting experimental and research activities. Sometimes their administrators are unaware of what other federal agencies are doing. Focus of attention has shifted since 1959 from the area of gifted children to that of the culturally and economically disadvantaged. The SDE is developing administrative mechanisms to give better service to individual schools. A program planning service is being developed to give assistance on proposals -- a school should send in a 2-page abstract of a proposal at least three months in advance of the federal deadline. Dr. Johnson's office will duplicate the abstract and distribute it to those having a "need to know." A coordinating committee of administrators of all the programs is being developed also; it will not exercise veto power over proposals, but may follow up proposals for additional information. The SDE has talent available for consultation on developing proposals, especially those having to do with curricular improvement and demonstration. The SDE transmits requests to the appropriate agency, and if a contract can be drawn directly with the institution the SDE will arrange for the writing of the contract with the federal agency.

DAVID BUSHNELL, United States Office of Education, Washington, D. C.

I will limit my comments to telling you some of the sources of funds for research and experiment that have become available through the US Office of Education.

Proposals are coming to us in great number, and in the past six months we have processed 230. The Office is much concerned now with staffing and identifying research people throughout the nation, so that we can effectively allocate the large funds for which we are responsible.

We have identified three major clusters of problems so far. They are being funded through the following branches:

1. The Employment Opportunities Branch encourages examination of the range and types of employment opportunities in our economy. It is particularly interested in techniques for identifying emerging opportunities, state and local; two or three years in advance. We are looking for new and promising predictive techniques. Conventional surveys of local educational and occupational needs have not been reliable, partly because the data upon which they are based -- including estimates by local employers of their future needs -- are unreliable. We need now to prepare students for job clusters rather than for specialized skills. If they are given only specialized skills, they will have to undertake numerous costly retraining programs during their lifetimes. In connection with job clusters, we seek ideas for making better and more complete counseling information available to both students and adults.

2. The Human Resources Development Branch focuses on the student -- it is receptive to original and promising proposals testing approaches on how to motivate the culturally disadvantaged youth, how to shape the classrooms to serve these students, and how to develop better techniques for the retraining of adults.

3. The Educational Resources and Training Branch supports exploration of better methods to train teachers and to develop more effective administrative arrangements for technical and industrial training at the local and state organizational levels. It supports proposals that look toward expanding and enlarging the opportunities and potential achievements of terminal students.

Some examples of promising programs in these fields, in which the Office of Education is actively interested, include these:

1. A curriculum development study proposed by the University of Wisconsin to train teacher-coordinators to plan better occupational programs at the high school level. It involves continuing seminars and coordination between educational segments.

2. A curricular program involving TV station KQED and Stanford University shows promise. The two agencies are cooperating in a project directed toward Spanish-speaking persons in the community, alerting them to vocational opportunities in the United States.

3. University of California at Berkeley is looking at a variety of state plans for new directions in occupational planning, studying measures of performance and criteria for judging state efforts. This is meant to serve newer occupational areas than the traditional fields of agriculture, home economics, distributive education, etc., of the old Smith-Hughes Act.

In summary, 24 federal agencies offer funds for educational research. For the first time, major funds are being made available and it behooves us to use this support at the local level. We face a critical shortage of research talents in education. We need updating and upgrading of personnel in order to take advantage of the funds and opportunities that are now available to us.

APPENDIX 1

Institutional Research Workers in California Junior Colleges

The following persons are designated by their college presidents as responsible for institutional research:

College	Name	Title
American River	Mrs. Audrey Menefee	Assistant to the President
Antelope Valley	Eugene Schumacher	Dean of Student Personnel
Bakersfield	Robert Poorman	Director of Institutional Research
Barstow	Leslie Wilbur	President
Cabrillo	Malby Roberts	Dean of Counseling & Records
Cerritos	William Keim	Administrative Dean of Community Services
Chabot	John R. McKinley	Dean of Instruction
	L. Jack Fishbaugh	Dean of Student Personnel
Chaffey	Daniel B. Milliken	President
Citrus	Edmund O. Smyth	Dean of Admissions & Institutional Research
Coalinga	Robert A. Annand	Dean of Instruction
Compton	Robert A. Mortenson	Dean of Instruction
Contra Costa	Jack Bessire	Staff Assistant, Research & Planning
Diablo Valley	John I. Carhart	Director of Institutional Research & Planning
Desert	Edwin T. Ingles	Dean of Instruction
El Camino	H. Lee Swanson	Coordinator of Research & Placement
Foothill	A. Robert DeHart	Director of Institutional Research & Planning
Fullerton	Ralph R. Snyder	Dean of Admissions & Records
Gavilan	Irving Batz	Dean of Students
Glendale	Harold Cochrane	Dean, Guidance & Counseling
Grossmont	Charles Collins	Dean of Instruction
	Mrs. Shirley Collamer	Counselor
Hancock (Allan)	William S. Houpt	Vice President
Hartnell	(No one assigned)	
Imperial Valley	Warner Renas	Dean of Admissions & Registrar
Lassen	Robert Theiler	Director/District Superintendent
Long Beach	Albert S. Derian	Dean of Student Personnel Services
Los Angeles		
East Los Angeles	Clinton E. Trimble	Counselor
L. A. City	Ben Gold	Counselor
L. A. Harbor	Wendell C. Black	President
L. A. Metropolitan	Morris J. Heldman	Dean of Instruction
L. A. Pierce	John B. Shepard	President
L. A. Trade-Tech.	William M. Mann	Dean, Educational Services
L. A. Valley	Charles Locks	Assistant Professor of Psychology
Marin	Roy Mikalson	Assistant Dean of Instruction
Merced	Loren R. Irwin	Dean of Student Personnel
Modesto	Bert Anderson	Dean of Student Personnel

Monterey Peninsula	Mrs. M. B. Marshall	Dean of Students
Mt. San Antonio	Max D. Bell	Deputy Superintendent
Mt. San Jacinto	Albert J. Grafsky	Administrative Assistant
Napa	James S. Diener	Director
Oceanside-Carlsbad	Mrs. Mary Jean Solle	Dean of Students
Orange Coast	Woodrow V. Nold	Acting Director of Institutional Research
Palomar	Robert Burton	Dean, Admissions & Records
~~Palo Verde~~	~~Alban E. Reid~~	~~President~~
Pasadena	Mrs. Jessie Chittenden	Assistant Dean for Placement
Peralta		
Laney	Robert L. Wynne	Assistant Dean, Admissions & Records
	Richard V. Matteson	Dean of Instruction
Merritt	Catherine Farley	Chairman of Research Committee & Psychometrist
Porterville	Lee Clearman	District Coordinator of Curriculum & Research
Rio Hondo	Morris Gergen	Assistant Superintendent, Instruction
Riverside	Evan Vail	Chairman, Counseling Staff
Sacramento City	Oliver J. Durand	Dean, Educational Relations
San Bernardino	J. W. McDaniel	Vice President for Instruction
San Diego City & Mesa	John Hotolson	Director of Operations
San Francisco City	Thomas Nesbitt	Director of Testing, Research, & Guidance
San Joaquin Delta	Dr. M. K. Bandley	Research Assistant
San Jose City	Clifford Transeth	Associate Dean, Extended Day
San Luis Obispo	Frank R. Martinez	Assistant Superintendent, Educational Services
San Mateo	George W. Ebey	Director of Research & Planning
Santa Ana	Vernon Armstrong	Dean of Technical Arts
Santa Barbara	Mrs. M. Lantagne	Dean of Student Personnel
Santa Monica	James Fugle	Dean of Admissions & Research
Santa Rosa	Mrs. Evelyn Pollard	Dean of Women
Sequoias	Lincoln H. Hall	Dean of Student Personnel
Shasta	Robert Nicols	Dean of Guidance, Admissions & Research
~~Sierra~~	~~Harold Weaver~~	~~President~~
	A. M. Akers	Vice President
Siskiyous	Harry W. Beck	Assistant Superintendent & Dean of Instruction
Southwestern	Mrs. L. Lowerison	Assistant Dean of Instruction
State Center		
Fresno	John T. McCuen	Dean of Instruction
Reedley	Robert Clark	Counselor
~~Taft~~	~~Garlyn Basham~~	~~President~~
Vallejo	Mrs. Carolyn Tilley	Placement Coordinator
Ventura	Robert Stone	Assistant Superintendent
Victor Valley	Burton Wadsworth	Dean of Students
West Valley	R. E. Arnold	Dean of Campus Facilities
Yuba	Algeo H. Brill	Vice President

APPENDIX 2

MATERIALS DISTRIBUTED AT THIRD SESSION OF CONFERENCE

SCHOOL	TITLE
American River	Basic Planning for the Los Rios Junior College District, 1965 to 1975: A Report to the Governing Board
Bakersfield	Preliminary Report on Honors-at-Entrance Program, 3-9-65
Barstow	Research in the Small Junior College (Wilbur)
Compton	A Report to the Faculty of Compton College on the New Level Program, December 1964
El Camino	Report to Faculty on Institutional Research, 2-3-64 (Swanson) The President's Report, 1964 A President's View of Institutional Research, November, 1964 (Marsee) Institutional Research in the California Public Junior College, 12-14-64 (Swanson)
Foothill	Career Programs for the Foothill District, 12-7-64 Principles Governing Class Size Three-Year Enrollment Projection, 12-8-64 FTE Teacher Requirements for 1965-66 Enrollment Predictors 1961-1985, 1-11-65 Current Expense Costs per ADA for 1963-64 for Junior College Districts
Grossmont	Student Characteristic Study for Participants of Conference on Institutional Research, Asilomar, California
L. A. City	Interview and Questionnaire Follow-up Study of L.A.C.C. Transfers Attending UCLA, Fall 1964, March 1965 (Gold)
L.A.Trade Tech	Selection and Guidance of Vocational Students at L.A. Trade-Tech College, March 13, 1965 (Crawford)
Merritt	Campus Research Projects (Carr)
Mt.San Antonio	Computer Class Scheduling (Olson) Information Concerning Chart of Cost of Attending Mt. San Antonio College by Majors 1964-65
Orange Coast	A Comparative Study of Achievement at Orange Coast College and Subsequent Achievement at California State College - Fullerton, Fall 1964 (Research Office, Orange Coast)
Pasadena City	Annual Report of the Placement Bureau 1963-64 (Chittenden)
Reedley	Four Semester Experience of Students Entering-Fall Semester, 1962
Riverside	A Study of the Mature Women Students Attending Day Classes at Riverside City College during the Spring Semester, 1964, October 1964 (Sensor)

SCHOOL	TITLE
Santa Barbara	Addendum to Chart on Success of Readmitted Students 1963, 10-6-64 Foreign Student Enrollment - 1959 Through Spring 1964, 3-2-65
San Bernardino	Summary of a Follow-up Study Made on Valley College Graduates for the School Years of 1960, 61, and 62 (Moore, et al) A Pupil's Rating Scale of an Instructor End of Course Student Evaluation of Political Science 1, January 1965
San Francisco	A Study of Semi-professional Graduates, October 1962 (Testing Office)
San Joaquin	Career Lectures High School of Origin Study & Enrollment Estimate (Fitch) Planning for Multiple Sites in California Junior Colleges (Fitch)
San Mateo	Evaluation of Able High School Seniors Program, College of San Mateo, Summer 1963 - December 1963 (Office of Research and Planning) A Proposal for Research, July 1, 1963 Student Evaluation of Teaching by Television, January 1965 (Inquiry Form)
Yuba	Results of Questionnaire Submitted to Graduates of Spring 1964 (Student Personnel Services Committee)
U.S.Dept.Health Education and Welfare	Basic and Applied Research Program Application Instructions (OE-2105-1) Preliminary Statement of the Guidelines for the Occupational Research and Planning Program (OE-80035 Demonstration Program Application Instructions (OE-2105-3) Small Contract Program (OE-2105-4) Cooperative Research Program Program of the Bureau of Educational Research and Development Conditions and Procedures: Grant for Research Training, Experimental Developmental, or Pilot Programs in Vocational and Technical Education (OE-4262) Curriculum Improvement Program (OE-2105-2)
State Dept. of Education	Report on Foundation Visits (Norris) Report on Visits to Educational Foundations, October 1962 (Johnson) Forms that Bureaus of California State Department of Education Require of Public Junior Colleges
UCLA	Preliminary Announcement of Second Spring I.R. Group, and the Junior College Leadership Program, May 12, 1965
UC Berkeley	A Report on the Experiences of a Sample of Junior College Graduates (Matteson)
CCHE	California Public Higher Education Cost & Statistical Analysis (Washburn)